

Weekly Report

Period: 10/22/2012 ~ 10/28/2012

This week, I was working on the implementation of several core algorithms including:

- ✓ Fiber parameterization: parameterize all fibers into a same space
- ✓ Spectral clustering: to get the control points for projection, we use spectral clustering to find the cluster center of the training fiber models, and use these central fibers as the projection sketch
- ✓ FFT: The dimensionality of fibers after parameterization is still very high leading to more computation resources. Instead of conducting clustering in this high-dimensional space, we first convert all parameterized fibers into a feature space consisting of the start point, end point, the centroid, and the first n FFT coefficients
- ✓ LAMP: an interactive high-dimensional projection method.

On-going work:

- Implementing the user interface to testify what have been done
- The manifold learning method: in our framework, we choose LLE

In the next week, I will integrate and testify all implemented algorithms, and conduct some experiments to verify our hypothesis.